



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

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July 17, 1987

TO: Lowell P. Braxton, Administrator  
Mineral Resource Development  
and Reclamation Program

FROM: Dave Wham, Reclamation Hydrologist *DWH*

RE: Silver Reef Mine, M/053/022, Washington County

In response to your July 13, 1987 memo, I have obtained the following information:

AMR Access Forms

Attached.

State Health RCRA Status

I met with Dale Marks from the Bureau of Solid and Hazardous Waste (BSHW). Dale explained that RCRA (Resource Conservation and Recovery Act of 1976) regulates the opening, operation and decommissioning (cradle to grave) of facilities which utilize or produce hazardous waste materials. Mining wastes are exempt from RCRA. CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act of 1980; "Superfund") is directed only at abandoned or inactive sites. Mining wastes are not exempt from these regulations.

When asked about the Superfund status of the Silver Reef Mine, Mr. Marks stated that he was certain that the site would not qualify for Superfund status as it simply does not meet the criteria for selection. He did indicate that the site was on their CERCLAS list, but that this was standard procedure whenever a file is opened on a site.

The BSHW prioritizes its sites in a four class system:

- 1) Eminent Danger: A very hot site posing a clear and immediate danger to the population - Immediate response.
- 2) Priority Sites: sites of high to moderate hazard - responded to in a sequential manner from a prioritized list.



- 3) Those sites which for one reason or another (remote location, low toxicity, etc.) are looked at on a "as time permits" basis.
- 4) Those sites which are currently on file, but not judged worthy of further expenditures of time.

The Silver Reef Mine is currently ranked as a class 3 site.

#### Air Photography

I spoke with Bob Adamson, USDA, Aerial Photo Field Office (524-5856). The Silver Reef area was last flown in 1984. Basic coverage of each exposure is 8.24 miles square. We can have the photo blown up to a 1:660 scale (3 miles square coverage). The prints would be 24x24". Cost of the 24x24" prints is \$20.00 for black and white and \$49.00 for infrared. The catalog number for the area is HAP84-247, exposure 134.

#### Geochemical Sampling

I have obtained a summary of the sampling conducted by the Department of Health in November, 1986. Six sites were sampled, the raw spoils pile, two leach pad locations, two pregnant pond sites (salts and water), and the overflow pond (refer to attached table 1 and map). The sampling program was conducted as part of an initial on-site investigation by the Department of Health. I have requested a copy of the summary report from Dale Marks and anticipate receiving the same within a week.



RIGHT OF ENTRY CONSENT FOR  
RECLAMATION, MONITORING & MAINTENANCE

by

(LANDOWNER)

*from  
AMR!  
Anything  
done??*

I/We, the undersigned,  
landowners/or as Agent for the Landowners, do hereby consent to the following  
activities by the Utah Division of Oil, Gas & Mining, Department of Natural  
Resources (Division) and its agents, employees or contractors:

1. Duly authorized employees, agents and/or contractors of the Division  
may enter upon described land to perform reclamation activities to  
eliminate hazards created by past mining activities that affect the  
public's health, safety and general welfare; monitor the success of  
the reclamation after construction and to maintain the intended level  
of reclamation on the abandoned mine sites in

\_\_\_\_\_ County, Utah which is more particularly described as  
follows:

2. The Division proposes to use adjacent and/or nearby material to close  
the mine openings.
3. The Division expressly assumes liability for any and all injuries  
sustained by its employees. Furthermore, the Division expressly  
waives liability of the Landowner for any and all injuries sustained  
by Division employees.
4. Except as herein set forth in this right of entry consent, neither  
the Division nor Landowner shall undertake any activity, either  
expressed or implied, nor make any representation which purports to  
bind the other.



5. All work performed shall be conducted in a professional manner. Further, duly authorized personnel of the Division are granted permission to inspect work at reasonable times.
6. It is expressly understood that all costs incurred for studies and reclamation work shall be the sole liability of the Division.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_

DIVISION OF OIL, GAS & MINING

(LANDOWNER)

I certify that I am the legal owner of the surface of the above described property and that I have received and read the lien information sheet supplied by the Division

By: \_\_\_\_\_

Name: Dianne R. Nielson

Title: Director

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: Landowner

Approved as to form:

\_\_\_\_\_  
Barbara W. Roberts  
Assistant Attorney General

\_\_\_\_\_  
AMR Administrator

0851R,92&93



CONSENT FOR RIGHT OF ENTRY - INGRESS AND EGRESS

PROJECT: \_\_\_\_\_  
Mine Site: \_\_\_\_\_

I/We, \_\_\_\_\_ the owner(s) or leasee of record of the  
following described property:

HEREBY Grant to the Utah Division of Oil, Gas & Mining, it's agents,  
employees and contractors, the Right to Ingress and Egress along a designated  
route on the above described lands to gain access to the \_\_\_\_\_.

1. The Division expressly assumes liability for any and all injuries  
sustained by its employees, furthermore, the Division expressly  
waives liability of the Landowner for any and all injuries sustained  
by Division employees.
2. The Division agrees to use the existing or designated roadway to  
enter and exit the \_\_\_\_\_ and assumes liability for damages  
caused by its employees to the roadway.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 1986.

DIVISION OF OIL, GAS & MINING

By: _____	By: _____
Name: <u>Dianne R. Nielson</u>	Name: _____
Title: <u>Director</u>	Title: _____

Approved as to form:

_____ Assistant Attorney General	_____ AMR Administrator
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0851R,96



Table 1

Results of Previous Sampling  
November 21, 1986

	5M-1	5M-2	5M-3	5M-4	5M-5	5M-6
Calcium, mg/l	615.00	1700.00	1900.00	7300.00	4000.00	187.00
Sodium, mg/l	29260.00	310000.00	920.00	120.00	570.00	795.00
Chloride, mg/l	9.00	46.90	—	137.00	135.00	974.90
Aluminum, mg/l	—	380.00	3500.00	8400.00	9500.00	—
Barium, mg/l	<0.01	2.00	96.0	120.00	300.00	0.01
Cadmium, ug/l	1060.00	26.00	<2.00	<2.00	3.00	16.00
Cobalt, ug/l	—	7.00	<0.80	1.00	4.00	—
Iron, mg/l	2.12	180.00	1800.00	5400.00	6000.00	0.19
Manganese, ug/l	126000.00	560.00	22.00	25.00	87.00	1630.00
Molybdenum, ug/l	—	<4.00	6.00	<4.00	<5.00	—
Selenium, ug/l	<0.50	<0.20	2.00	20.00	13.00	<0.50
Vanadium, ug/l	—	3.00	57.00	100.00	62.00	—
Magnesium, mg/l	6090.00	13000.00	2100.00	5500.00	9300.00	77.00
Sulfate, mg/l	13690.00	220000.00	4800.00	14000.00	2400.00	881.00
Arsenic, ug/l	<0.50	1.00	1.00	0.60	3.00	<0.50
Beryllium, ug/l	—	0.04	1.15	0.30	0.50	—
Chromium, ug/l	<5.00	<1.00	3.00	6.00	7.00	<5.00
Copper, ug/l	221500.00	360.00	92.00	64.00	450.00	110.00
Lead, ug/l	<5.00	<8.00	11.00	12.00	20.00	<5.00
Mercury, ug/l	373.50	0.90	0.20	0.06	0.80	1.50
Nickel, ug/l	—	6.00	5.00	6.00	11.00	—
Silver, ug/l	8800.00	150.00	2.00	11.00	71.00	10.00
Zinc, ug/l	109000.00	45.00	7.00	13.00	31.00	55.00
Potassium, mg/l	14.00	—	—	—	—	2.00



Figure 4  
 Sample Locations  
 Leeds Silver Reclamation Site (SM)  
 November 21, 1986

